

**ANALYTICAL REPORT**

Job Number: 360-31095-1

Job Description: Olin Chemical Surfacewater Quarterly

For:  
Olin Corporation  
3855 North Ocoee Street  
Suite 200  
Cleveland, TN 37312-4441

Attention: Mr. Steven Morrow

CHECKED FOR COMPLETENESS  
OF PARAMETERS ORDERED BY:  
*AMM*

Approved for release.  
Joe Chimi  
Report Production Representative  
12/1/10 1:56 PM

*Joseph A. Chimi Jr.*  
Designee for  
Becky C Mason  
Project Manager II  
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12/01/2010

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, this report may not be reproduced except in full, and with written approval from the laboratory. TestAmerica Westfield Certifications and Approvals: MADEP MA014, RIDOH57, CTDPH 0494, VT DECWSD, NH DES 2539, NELAP FL E87912 TOX, NELAP NJ MA008 TOX, NELAP NY 10843, NY ELAP 10843, North Carolina 647, NELAP PA 68-04386. Field sampling is performed under SOPs WE-FLD-001 and WE-FLD-002.

TestAmerica Laboratories, Inc.

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# MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Westfield** Project #: **360-31095-1**

Project Location: **Wilmington, MA** RTN:

**This form provides certifications for the following data set: list Laboratory Sample ID Number(s):**

**360-31095-(1-8)**

Matrices:  Groundwater/Surface Water  Soil/Sediment  Drinking Water  Air  other:

## CAM Protocols (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	Mass DEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	Mass DEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	Mass DEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	332.0 Perchlorate CAM VIII B <input type="checkbox"/>	

## Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## Responses to Questions G, H and I below are required for "Presumptive Certainty" status

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
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**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

<b>H</b>	Were <b>all</b> QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.**

Signature:

Position:

Laboratory Director

Printed Name:

Steven C. Hartmann

Date:

12/1/10 13:47

This form has been electronically signed and approved

## CASE NARRATIVE

**Client: Olin Corporation**

**Project: Olin Chemical Surfacewater Quarterly**

**Report Number: 360-31095-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 11/15/2010; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.0 and 3.6 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2 C of the required temperature or method specified range. For samples with a specified temperature of 4 C, samples with a temperature ranging from just above freezing temperature of water to 6 C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### **TOTAL METALS (ICP)**

Samples OC-SW-ISCO1 (360-31095-1), OC-SW-ISCO2 (360-31095-2), OC-SW-ISCO3 (360-31095-3), OC-SW-PZ-16RR (360-31095-4), OC-SW-PZ-17RR (360-31095-5), OC-SW-PZ-18R (360-31095-6), OC-SW-SD-17 (360-31095-7) and OC-SW-PZ18R-DUP (360-31095-8) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 11/18/2010.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

### **DISSOLVED METALS**

Samples OC-SW-ISCO1 (360-31095-1), OC-SW-ISCO2 (360-31095-2), OC-SW-ISCO3 (360-31095-3), OC-SW-PZ-16RR (360-31095-4), OC-SW-PZ-17RR (360-31095-5), OC-SW-PZ-18R (360-31095-6), OC-SW-SD-17 (360-31095-7) and OC-SW-PZ18R-DUP (360-31095-8) were analyzed for dissolved metals in accordance with EPA SW-846 Method 6010B. The samples were analyzed on 11/19/2010.

Sodium failed the recovery criteria low for the MS and MSD of sample OC-SW-PZ-18R (360-31095-6) in batch 360-66152. The associated LCS and LCSD recovered within control limits. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No other difficulties were encountered during the dissolved metals analyses.

All other quality control parameters were within the acceptance limits.

### **ANIONS**

Samples OC-SW-ISCO1 (360-31095-1), OC-SW-ISCO2 (360-31095-2), OC-SW-ISCO3 (360-31095-3), OC-SW-PZ-16RR (360-31095-4), OC-SW-PZ-17RR (360-31095-5), OC-SW-PZ-18R (360-31095-6), OC-SW-SD-17 (360-31095-7) and OC-SW-PZ18R-DUP (360-31095-8) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/16/2010, 11/19/2010 and 11/22/2010.

Sulfate failed the recovery criteria high for the MS and MSD of sample OC-SW-PZ-18RMS (360-31095-6) in batch 360-66328. The associated LCS recovered within control limits. Refer to the QC report for details.

Samples OC-SW-ISCO1 (360-31095-1)[10X], OC-SW-ISCO2 (360-31095-2)[10X], OC-SW-ISCO3 (360-31095-3)[10X], OC-SW-PZ-16RR (360-31095-4)[10X], OC-SW-PZ-17RR (360-31095-5)[10X], OC-SW-PZ-18R (360-31095-6)[10X], OC-SW-SD-17 (360-31095-7)[10X] and OC-SW-PZ18R-DUP (360-31095-8)[10X] required dilution prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

#### **AMMONIA**

Samples OC-SW-ISCO1 (360-31095-1), OC-SW-ISCO2 (360-31095-2), OC-SW-ISCO3 (360-31095-3), OC-SW-PZ-16RR (360-31095-4), OC-SW-PZ-17RR (360-31095-5), OC-SW-PZ-18R (360-31095-6), OC-SW-SD-17 (360-31095-7) and OC-SW-PZ18R-DUP (360-31095-8) were analyzed for ammonia in accordance with Lachat 107-06-1B. The samples were prepared on 11/23/2010 and 11/30/2010 and analyzed on 11/24/2010 and 11/30/2010.

Samples OC-SW-ISCO1 (360-31095-1)[5X], OC-SW-ISCO2 (360-31095-2)[5X], OC-SW-PZ-16RR (360-31095-4)[5X], OC-SW-PZ-17RR (360-31095-5)[5X], OC-SW-PZ-18R (360-31095-6)[5X], OC-SW-SD-17 (360-31095-7)[5X] and OC-SW-PZ18R-DUP (360-31095-8)[5X] required dilution prior to analysis due to high concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

#### **SPECIFIC CONDUCTIVITY**

Samples OC-SW-ISCO1 (360-31095-1), OC-SW-ISCO2 (360-31095-2), OC-SW-ISCO3 (360-31095-3), OC-SW-PZ-16RR (360-31095-4), OC-SW-PZ-17RR (360-31095-5), OC-SW-PZ-18R (360-31095-6), OC-SW-SD-17 (360-31095-7) and OC-SW-PZ18R-DUP (360-31095-8) were analyzed for specific conductivity in accordance with SM20 2510B. The samples were analyzed on 11/18/2010.

No difficulties were encountered during the conductivity analyses.

All quality control parameters were within the acceptance limits.

#### **NITROGEN-NITRITE**

Samples OC-SW-ISCO1 (360-31095-1), OC-SW-ISCO2 (360-31095-2), OC-SW-ISCO3 (360-31095-3), OC-SW-PZ-16RR (360-31095-4), OC-SW-PZ-17RR (360-31095-5), OC-SW-PZ-18R (360-31095-6), OC-SW-SD-17 (360-31095-7) and OC-SW-PZ18R-DUP (360-31095-8) were analyzed for Nitrogen-Nitrite in accordance with SM20 4500 NO<sub>2</sub> B. The samples were analyzed on 11/17/2010.

No difficulties were encountered during the nitrite analyses.

All quality control parameters were within the acceptance limits.

## EXECUTIVE SUMMARY - Detections

Client: Olin Corporation

Job Number: 360-31095-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>360-31095-1 OC-SW-ISCO1</b>					
Aluminum	300		100	ug/L	6010B
Chromium	27		5.0	ug/L	6010B
Sodium	79000		2000	ug/L	6010B
Sulfate	220		20	mg/L	300.0
Nitrate as N	0.38		0.050	mg/L	300.0
Chloride	130		10	mg/L	300.0
Ammonia	38		0.50	mg/L	L107-06-1B
Specific Conductance	870		1.0	umhos/cm	SM 2510B
<i>Dissolved</i>					
Aluminum	190		100	ug/L	6010B
Chromium	19		5.0	ug/L	6010B
Sodium	87000		2000	ug/L	6010B
<b>360-31095-2 OC-SW-ISCO2</b>					
Aluminum	510		100	ug/L	6010B
Chromium	47		5.0	ug/L	6010B
Sodium	120000		2000	ug/L	6010B
Sulfate	470		20	mg/L	300.0
Nitrate as N	2.8		0.050	mg/L	300.0
Chloride	140		10	mg/L	300.0
Ammonia	61		0.50	mg/L	L107-06-1B
Specific Conductance	1400		1.0	umhos/cm	SM 2510B
Nitrite as N	0.017		0.010	mg/L	SM 4500 NO2 B
<i>Dissolved</i>					
Aluminum	290		100	ug/L	6010B
Chromium	27		5.0	ug/L	6010B
Sodium	120000		2000	ug/L	6010B
<b>360-31095-3 OC-SW-ISCO3</b>					
Aluminum	56	J	100	ug/L	6010B
Chromium	0.65	J	5.0	ug/L	6010B
Sodium	66000		2000	ug/L	6010B
Sulfate	41		2.0	mg/L	300.0
Nitrate as N	0.95		0.050	mg/L	300.0
Chloride	160		10	mg/L	300.0
Ammonia	2.1		0.10	mg/L	L107-06-1B
Specific Conductance	660		1.0	umhos/cm	SM 2510B
<i>Dissolved</i>					
Aluminum	24	J	100	ug/L	6010B
Sodium	79000		2000	ug/L	6010B

## EXECUTIVE SUMMARY - Detections

Client: Olin Corporation

Job Number: 360-31095-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>360-31095-4 OC-SW-PZ-16RR</b>					
Aluminum	1900	100	ug/L	6010B	
Chromium	390	5.0	ug/L	6010B	
Sodium	120000	2000	ug/L	6010B	
Sulfate	520	20	mg/L	300.0	
Nitrate as N	2.0	0.050	mg/L	300.0	
Chloride	160	10	mg/L	300.0	
Ammonia	66	0.50	mg/L	L107-06-1B	
Specific Conductance	1500	1.0	umhos/cm	SM 2510B	
Nitrite as N	0.017	0.010	mg/L	SM 4500 NO2 B	
<i>Dissolved</i>					
Aluminum	860	100	ug/L	6010B	
Chromium	250	5.0	ug/L	6010B	
Sodium	130000	2000	ug/L	6010B	
<b>360-31095-5 OC-SW-PZ-17RR</b>					
Aluminum	3400	100	ug/L	6010B	
Chromium	790	5.0	ug/L	6010B	
Sodium	130000	2000	ug/L	6010B	
Sulfate	530	20	mg/L	300.0	
Nitrate as N	0.53	0.050	mg/L	300.0	
Chloride	160	10	mg/L	300.0	
Ammonia	66	0.50	mg/L	L107-06-1B	
Specific Conductance	1500	1.0	umhos/cm	SM 2510B	
<i>Dissolved</i>					
Aluminum	1600	100	ug/L	6010B	
Chromium	490	5.0	ug/L	6010B	
Sodium	140000	2000	ug/L	6010B	
<b>360-31095-6 OC-SW-PZ-18R</b>					
Aluminum	240	100	ug/L	6010B	
Chromium	24	5.0	ug/L	6010B	
Sodium	71000	2000	ug/L	6010B	
Sulfate	190	20	mg/L	300.0	
Nitrate as N	0.25	0.050	mg/L	300.0	
Chloride	120	10	mg/L	300.0	
Ammonia	36	0.50	mg/L	L107-06-1B	
Specific Conductance	790	1.0	umhos/cm	SM 2510B	
<i>Dissolved</i>					
Aluminum	150	100	ug/L	6010B	
Chromium	16	5.0	ug/L	6010B	
Sodium	81000	2000	ug/L	6010B	

## EXECUTIVE SUMMARY - Detections

Client: Olin Corporation

Job Number: 360-31095-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>360-31095-7 OC-SW-SD-17</b>					
Aluminum	3600	100	ug/L	6010B	
Chromium	850	5.0	ug/L	6010B	
Sodium	140000	2000	ug/L	6010B	
Sulfate	540	20	mg/L	300.0	
Nitrate as N	0.52	0.050	mg/L	300.0	
Chloride	170	10	mg/L	300.0	
Ammonia	71	0.50	mg/L	L107-06-1B	
Specific Conductance	1600	1.0	umhos/cm	SM 2510B	
Nitrite as N	0.010	0.010	mg/L	SM 4500 NO2 B	
<b>Dissolved</b>					
Aluminum	1700	100	ug/L	6010B	
Chromium	500	5.0	ug/L	6010B	
Sodium	140000	2000	ug/L	6010B	
<b>360-31095-8 OC-SW-PZ18R-DUP</b>					
Aluminum	230	100	ug/L	6010B	
Chromium	22	5.0	ug/L	6010B	
Sodium	70000	2000	ug/L	6010B	
Sulfate	180	20	mg/L	300.0	
Nitrate as N	0.23	0.050	mg/L	300.0	
Chloride	110	10	mg/L	300.0	
Ammonia	37	0.50	mg/L	L107-06-1B	
Specific Conductance	780	1.0	umhos/cm	SM 2510B	
<b>Dissolved</b>					
Aluminum	150	100	ug/L	6010B	
Chromium	15	5.0	ug/L	6010B	
Sodium	80000	2000	ug/L	6010B	

## METHOD SUMMARY

Client: Olin Corporation

Job Number: 360-31095-1

Description		Lab Location	Method	Preparation Method
Matrix	Water			
Dissolved Metals		TAL WFD	SW846 6010B	
Sample Filtration, Field				FIELD_FLTRD
Total Metals		TAL WFD	SW846 6010B	
Preparation, Total Metals		TAL WFD		SW846 3010A
Chloride & Sulfate		TAL WFD	40CFR136A 300.0	
Nitrate & Nitrite		TAL WFD	40CFR136A 300.0	
Nitrogen Ammonia		TAL WFD	LACHAT L107-06-1B	
Distillation, Ammonia		TAL WFD		Distill/Ammonia
Conductivity, Specific Conductance		TAL WFD	SM SM 2510B	
Nitrogen, Nitrite		TAL WFD	SM SM 4500 NO2 B	

### Lab References:

TAL WFD = TestAmerica Westfield

### Method References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

LACHAT = LACHAT

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: Olin Corporation

Job Number: 360-31095-1

Method	Analyst	Analyst ID
SW846 6010B	Smith, Tim J	TJS
40CFR136A 300.0	Emerich, Rich W	RWE
40CFR136A 300.0	Smith, Tim J	TJS
LACHAT L107-06-1B	Emerich, Rich W	RWE
SM SM 2510B	Stewart, Alyse M	AMS
SM SM 4500 NO2 B	Stewart, Alyse M	AMS

## SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-31095-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-31095-1	OC-SW-ISCO1	Water	11/15/2010 1452	11/15/2010 1730
360-31095-2	OC-SW-ISCO2	Water	11/15/2010 1310	11/15/2010 1730
360-31095-3	OC-SW-ISCO3	Water	11/15/2010 1255	11/15/2010 1730
360-31095-4	OC-SW-PZ-16RR	Water	11/15/2010 1330	11/15/2010 1730
360-31095-5	OC-SW-PZ-17RR	Water	11/15/2010 1355	11/15/2010 1730
360-31095-6	OC-SW-PZ-18R	Water	11/15/2010 1420	11/15/2010 1730
360-31095-6MS	OC-SW-PZ-18R	Water	11/15/2010 1420	11/15/2010 1730
360-31095-6MSD	OC-SW-PZ-18R	Water	11/15/2010 1420	11/15/2010 1730
360-31095-7	OC-SW-SD-17	Water	11/15/2010 1405	11/15/2010 1730
360-31095-8	OC-SW-PZ18R-DUP	Water	11/15/2010 1420	11/15/2010 1730

## **SAMPLE RESULTS**

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-ISCO1Lab Sample ID: 360-31095-1  
Client Matrix: WaterDate Sampled: 11/15/2010 1452  
Date Received: 11/15/2010 1730**6010B Total Metals**

Method:	6010B	Analysis Batch:	360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch:	360-65998	Lab File ID:	111810b.csv
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1838			Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	300		12	100
Chromium	27		0.65	5.0
Sodium	79000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch:	360-66152	Instrument ID:	Varian ICP
Preparation:	N/A			Lab File ID:	111910d.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1502			Final Weight/Volume:	1.0 mL
Date Prepared:					

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	190		12	100
Chromium	19		0.65	5.0
Sodium	87000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-ISCO2Lab Sample ID: 360-31095-2  
Client Matrix: WaterDate Sampled: 11/15/2010 1310  
Date Received: 11/15/2010 1730**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-65998	Lab File ID:	111810b.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1841		Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	510		12	100
Chromium	47		0.65	5.0
Sodium	120000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch: 360-66152	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	111910d.csv
Dilution:	1.0		Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1505		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	290		12	100
Chromium	27		0.65	5.0
Sodium	120000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-ISCO3Lab Sample ID: 360-31095-3  
Client Matrix: WaterDate Sampled: 11/15/2010 1255  
Date Received: 11/15/2010 1730**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-65998	Lab File ID:	111810b.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1844		Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	56	J	12	100
Chromium	0.65	J	0.65	5.0
Sodium	66000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch: 360-66152	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	111910d.csv
Dilution:	1.0		Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1508		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	24	J	12	100
Chromium	ND		0.65	5.0
Sodium	79000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-PZ-16RR

Lab Sample ID: 360-31095-4

Date Sampled: 11/15/2010 1330

Client Matrix: Water

Date Received: 11/15/2010 1730

**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-65998	Lab File ID:	111810b.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1847		Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1900		12	100
Chromium	390		0.65	5.0
Sodium	120000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch: 360-66152	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	111910d.csv
Dilution:	1.0		Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1515		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	860		12	100
Chromium	250		0.65	5.0
Sodium	130000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-PZ-17RRLab Sample ID: 360-31095-5  
Client Matrix: WaterDate Sampled: 11/15/2010 1355  
Date Received: 11/15/2010 1730**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-65998	Lab File ID:	111810b.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1850		Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	3400		12	100
Chromium	790		0.65	5.0
Sodium	130000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch: 360-66152	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	111910d.csv
Dilution:	1.0		Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1518		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1600		12	100
Chromium	490		0.65	5.0
Sodium	140000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-PZ-18RLab Sample ID: 360-31095-6  
Client Matrix: WaterDate Sampled: 11/15/2010 1420  
Date Received: 11/15/2010 1730**6010B Total Metals**

Method:	6010B	Analysis Batch:	360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch:	360-65998	Lab File ID:	111810b.csv
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1818			Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	240		12	100
Chromium	24		0.65	5.0
Sodium	71000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch:	360-66152	Instrument ID:	Varian ICP
Preparation:	N/A			Lab File ID:	111910d.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1445			Final Weight/Volume:	1.0 mL
Date Prepared:					

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	150		12	100
Chromium	16		0.65	5.0
Sodium	81000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-SD-17

Lab Sample ID: 360-31095-7

Date Sampled: 11/15/2010 1405

Client Matrix: Water

Date Received: 11/15/2010 1730

**6010B Total Metals**

Method:	6010B	Analysis Batch: 360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-65998	Lab File ID:	111810b.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1853		Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	3600		12	100
Chromium	850		0.65	5.0
Sodium	140000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch: 360-66152	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	111910d.csv
Dilution:	1.0		Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1521		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1700		12	100
Chromium	500		0.65	5.0
Sodium	140000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**Client Sample ID:** OC-SW-PZ18R-DUPLab Sample ID: 360-31095-8  
Client Matrix: WaterDate Sampled: 11/15/2010 1420  
Date Received: 11/15/2010 1730**6010B Total Metals**

Method:	6010B	Analysis Batch:	360-66064	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch:	360-65998	Lab File ID:	111810b.csv
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/18/2010 1856			Final Weight/Volume:	50 mL
Date Prepared:	11/18/2010 0829				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	230		12	100
Chromium	22		0.65	5.0
Sodium	70000		280	2000

**6010B Dissolved Metals-Dissolved**

Method:	6010B	Analysis Batch:	360-66152	Instrument ID:	Varian ICP
Preparation:	N/A			Lab File ID:	111910d.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1524			Final Weight/Volume:	1.0 mL
Date Prepared:					

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	150		12	100
Chromium	15		0.65	5.0
Sodium	80000		280	2000

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry**

Client Sample ID:	OC-SW-ISCO1							
Lab Sample ID:	360-31095-1							
Client Matrix:	Water							
Analyte	Result	Qual	Units	RL	RL	Dil	Method	
Nitrate as N	0.38		mg/L	0.050	0.050	1.0	300.0	
	Analysis Batch: 360-66057		Date Analyzed:	11/16/2010 1916				
Sulfate	220		mg/L	20	20	10	300.0	
	Analysis Batch: 360-66184		Date Analyzed:	11/19/2010 1626				
Chloride	130		mg/L	10	10	10	300.0	
	Analysis Batch: 360-66184		Date Analyzed:	11/19/2010 1626				
Ammonia	38		mg/L	0.50	0.50	5.0	L107-06-1B	
	Analysis Batch: 360-66304		Date Analyzed:	11/24/2010 1130				
	Prep Batch: 360-66228		Date Prepared:	11/23/2010 0955				
Specific Conductance	870		umhos/cm	1.0	1.0	1.0	SM 2510B	
	Analysis Batch: 360-66028		Date Analyzed:	11/18/2010 1111				
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2	
	Analysis Batch: 360-65968		Date Analyzed:	11/17/2010 1120				

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry**

Client Sample ID:	OC-SW-ISCO2							
Lab Sample ID:	360-31095-2							
Client Matrix:	Water							
Analyte	Result	Qual	Units	RL	RL	Dil	Method	
Nitrate as N	2.8		mg/L	0.050	0.050	1.0	300.0	
	Analysis Batch: 360-66057		Date Analyzed: 11/16/2010 1931					
Sulfate	470		mg/L	20	20	10	300.0	
	Analysis Batch: 360-66328		Date Analyzed: 11/22/2010 1230					
Chloride	140		mg/L	10	10	10	300.0	
	Analysis Batch: 360-66328		Date Analyzed: 11/22/2010 1230					
Ammonia	61		mg/L	0.50	0.50	5.0	L107-06-1B	
	Analysis Batch: 360-66304		Date Analyzed: 11/24/2010 1131					
	Prep Batch: 360-66228		Date Prepared: 11/23/2010 0955					
Specific Conductance	1400		umhos/cm	1.0	1.0	1.0	SM 2510B	
	Analysis Batch: 360-66028		Date Analyzed: 11/18/2010 1112					
Nitrite as N	0.017		mg/L	0.010	0.010	1.0	SM 4500 NO2	
	Analysis Batch: 360-65968		Date Analyzed: 11/17/2010 1120					

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry**

Client Sample ID:	OC-SW-ISCO3							
Lab Sample ID:	360-31095-3							
Client Matrix:	Water							
Analyte	Result	Qual	Units	RL	RL	Dil	Method	
Nitrate as N	0.95		mg/L	0.050	0.050	1.0	300.0	
	Analysis Batch: 360-66057		Date Analyzed:	11/16/2010 1946				
Sulfate	41		mg/L	2.0	2.0	1.0	300.0	
	Analysis Batch: 360-66328		Date Analyzed:	11/22/2010 1245				
Chloride	160		mg/L	10	10	10	300.0	
	Analysis Batch: 360-66328		Date Analyzed:	11/22/2010 1330				
Ammonia	2.1		mg/L	0.10	0.10	1.0	L107-06-1B	
	Analysis Batch: 360-66304		Date Analyzed:	11/24/2010 1036				
	Prep Batch: 360-66228		Date Prepared:	11/23/2010 0955				
Specific Conductance	660		umhos/cm	1.0	1.0	1.0	SM 2510B	
	Analysis Batch: 360-66028		Date Analyzed:	11/18/2010 1114				
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2	
	Analysis Batch: 360-65968		Date Analyzed:	11/17/2010 1120				

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry****Client Sample ID:** OC-SW-PZ-16RR

Lab Sample ID: 360-31095-4

Date Sampled: 11/15/2010 1330

Client Matrix: Water

Date Received: 11/15/2010 1730

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Nitrate as N	2.0		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-66057		Date Analyzed: 11/16/2010 2001				
Sulfate	520		mg/L	20	20	10	300.0
	Analysis Batch: 360-66328		Date Analyzed: 11/22/2010 1401				
Chloride	160		mg/L	10	10	10	300.0
	Analysis Batch: 360-66328		Date Analyzed: 11/22/2010 1401				
Ammonia	66		mg/L	0.50	0.50	5.0	L107-06-1B
	Analysis Batch: 360-66304		Date Analyzed: 11/24/2010 1132				
	Prep Batch: 360-66228		Date Prepared: 11/23/2010 0955				
Specific Conductance	1500		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-66028		Date Analyzed: 11/18/2010 1115				
Nitrite as N	0.017		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-65968		Date Analyzed: 11/17/2010 1120				

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry****Client Sample ID:** OC-SW-PZ-17RR

Lab Sample ID: 360-31095-5

Date Sampled: 11/15/2010 1355

Client Matrix: Water

Date Received: 11/15/2010 1730

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Nitrate as N	0.53		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-66057		Date Analyzed:	11/16/2010 2016			
Sulfate	530		mg/L	20	20	10	300.0
	Analysis Batch: 360-66328		Date Analyzed:	11/22/2010 1431			
Chloride	160		mg/L	10	10	10	300.0
	Analysis Batch: 360-66328		Date Analyzed:	11/22/2010 1431			
Ammonia	66		mg/L	0.50	0.50	5.0	L107-06-1B
	Analysis Batch: 360-66490		Date Analyzed:	11/30/2010 1645			
	Prep Batch: 360-66418		Date Prepared:	11/30/2010 0912			
Specific Conductance	1500		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-66028		Date Analyzed:	11/18/2010 1117			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-65968		Date Analyzed:	11/17/2010 1120			

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry****Client Sample ID:** OC-SW-PZ-18R

Lab Sample ID: 360-31095-6

Date Sampled: 11/15/2010 1420

Client Matrix: Water

Date Received: 11/15/2010 1730

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Nitrate as N	0.25		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-66057		Date Analyzed:	11/16/2010 1830			
Sulfate	190		mg/L	20	20	10	300.0
	Analysis Batch: 360-66328		Date Analyzed:	11/22/2010 1501			
Chloride	120		mg/L	10	10	10	300.0
	Analysis Batch: 360-66328		Date Analyzed:	11/22/2010 1501			
Ammonia	36		mg/L	0.50	0.50	5.0	L107-06-1B
	Analysis Batch: 360-66304		Date Analyzed:	11/24/2010 1126			
	Prep Batch: 360-66228		Date Prepared:	11/23/2010 0955			
Specific Conductance	790		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-66028		Date Analyzed:	11/18/2010 1118			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-65968		Date Analyzed:	11/17/2010 1120			

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry**

Client Sample ID:	OC-SW-SD-17							
Lab Sample ID:	360-31095-7							
Client Matrix:	Water							
Analyte	Result	Qual	Units	RL	RL	Dil	Method	
Nitrate as N	0.52		mg/L	0.050	0.050	1.0	300.0	
	Analysis Batch: 360-66057		Date Analyzed: 11/16/2010 2031					
Sulfate	540		mg/L	20	20	10	300.0	
	Analysis Batch: 360-66329		Date Analyzed: 11/22/2010 1702					
Chloride	170		mg/L	10	10	10	300.0	
	Analysis Batch: 360-66329		Date Analyzed: 11/22/2010 1702					
Ammonia	71		mg/L	0.50	0.50	5.0	L107-06-1B	
	Analysis Batch: 360-66305		Date Analyzed: 11/24/2010 1133					
	Prep Batch: 360-66232		Date Prepared: 11/23/2010 1056					
Specific Conductance	1600		umhos/cm	1.0	1.0	1.0	SM 2510B	
	Analysis Batch: 360-66028		Date Analyzed: 11/18/2010 1121					
Nitrite as N	0.010		mg/L	0.010	0.010	1.0	SM 4500 NO2	
	Analysis Batch: 360-65968		Date Analyzed: 11/17/2010 1120					

**Analytical Data**

Client: Olin Corporation

Job Number: 360-31095-1

**General Chemistry****Client Sample ID:** OC-SW-PZ18R-DUP

Lab Sample ID: 360-31095-8

Date Sampled: 11/15/2010 1420

Client Matrix: Water

Date Received: 11/15/2010 1730

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Nitrate as N	0.23		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-66057		Date Analyzed:	11/16/2010 2046			
Sulfate	180		mg/L	20	20	10	300.0
	Analysis Batch: 360-66329		Date Analyzed:	11/22/2010 1802			
Chloride	110		mg/L	10	10	10	300.0
	Analysis Batch: 360-66329		Date Analyzed:	11/22/2010 1802			
Ammonia	37		mg/L	0.50	0.50	5.0	L107-06-1B
	Analysis Batch: 360-66305		Date Analyzed:	11/24/2010 1134			
	Prep Batch: 360-66232		Date Prepared:	11/23/2010 1056			
Specific Conductance	780		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-66028		Date Analyzed:	11/18/2010 1123			
Nitrite as N	ND		mg/L	0.010	0.010	1.0	SM 4500 NO2
	Analysis Batch: 360-65968		Date Analyzed:	11/17/2010 1120			

## DATA REPORTING QUALIFIERS

Client: Olin Corporation

Job Number: 360-31095-1

Lab Section	Qualifier	Description
Metals		
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry	F	MS or MSD exceeds the control limits

# **QUALITY CONTROL RESULTS**

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 360-65998</b>					
LCS 360-65998/2-A	Lab Control Sample	T	Water	3010A	
LCSD 360-65998/3-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 360-65998/1-A	Method Blank	T	Water	3010A	
360-31095-1	OC-SW-ISCO1	T	Water	3010A	
360-31095-2	OC-SW-ISCO2	T	Water	3010A	
360-31095-3	OC-SW-ISCO3	T	Water	3010A	
360-31095-4	OC-SW-PZ-16RR	T	Water	3010A	
360-31095-5	OC-SW-PZ-17RR	T	Water	3010A	
360-31095-6	OC-SW-PZ-18R	T	Water	3010A	
360-31095-6MS	Matrix Spike	T	Water	3010A	
360-31095-6MSD	Matrix Spike Duplicate	T	Water	3010A	
360-31095-6PDS	Post Digestion Spike	T	Water	3010A	
360-31095-6SD	Serial Dilution	T	Water	3010A	
360-31095-7	OC-SW-SD-17	T	Water	3010A	
360-31095-8	OC-SW-PZ18R-DUP	T	Water	3010A	
<b>Analysis Batch: 360-66064</b>					
LCS 360-65998/2-A	Lab Control Sample	T	Water	6010B	360-65998
LCSD 360-65998/3-A	Lab Control Sample Duplicate	T	Water	6010B	360-65998
MB 360-65998/1-A	Method Blank	T	Water	6010B	360-65998
360-31095-1	OC-SW-ISCO1	T	Water	6010B	360-65998
360-31095-2	OC-SW-ISCO2	T	Water	6010B	360-65998
360-31095-3	OC-SW-ISCO3	T	Water	6010B	360-65998
360-31095-4	OC-SW-PZ-16RR	T	Water	6010B	360-65998
360-31095-5	OC-SW-PZ-17RR	T	Water	6010B	360-65998
360-31095-6	OC-SW-PZ-18R	T	Water	6010B	360-65998
360-31095-6MS	Matrix Spike	T	Water	6010B	360-65998
360-31095-6MSD	Matrix Spike Duplicate	T	Water	6010B	360-65998
360-31095-6PDS	Post Digestion Spike	T	Water	6010B	360-65998
360-31095-6SD	Serial Dilution	T	Water	6010B	360-65998
360-31095-7	OC-SW-SD-17	T	Water	6010B	360-65998
360-31095-8	OC-SW-PZ18R-DUP	T	Water	6010B	360-65998

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Analysis Batch:360-66152</b>					
LCS 360-66152/1	Lab Control Sample	T	Water	6010B	
LCSD 360-66152/4	Lab Control Sample Duplicate	T	Water	6010B	
MB 360-66152/2	Method Blank	T	Water	6010B	
360-31095-1	OC-SW-ISCO1	D	Water	6010B	
360-31095-2	OC-SW-ISCO2	D	Water	6010B	
360-31095-3	OC-SW-ISCO3	D	Water	6010B	
360-31095-4	OC-SW-PZ-16RR	D	Water	6010B	
360-31095-5	OC-SW-PZ-17RR	D	Water	6010B	
360-31095-6	OC-SW-PZ-18R	D	Water	6010B	
360-31095-6MS	Matrix Spike	D	Water	6010B	
360-31095-6MSD	Matrix Spike Duplicate	D	Water	6010B	
360-31095-6SD	Serial Dilution	D	Water	6010B	
360-31095-7	OC-SW-SD-17	D	Water	6010B	
360-31095-8	OC-SW-PZ18R-DUP	D	Water	6010B	

#### Report Basis

D = Dissolved

T = Total

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:360-65968</b>					
LCS 360-65968/10	Lab Control Sample	T	Water	SM 4500 NO2 B	
MB 360-65968/9	Method Blank	T	Water	SM 4500 NO2 B	
360-31095-1	OC-SW-ISCO1	T	Water	SM 4500 NO2 B	
360-31095-2	OC-SW-ISCO2	T	Water	SM 4500 NO2 B	
360-31095-3	OC-SW-ISCO3	T	Water	SM 4500 NO2 B	
360-31095-4	OC-SW-PZ-16RR	T	Water	SM 4500 NO2 B	
360-31095-5	OC-SW-PZ-17RR	T	Water	SM 4500 NO2 B	
360-31095-6	OC-SW-PZ-18R	T	Water	SM 4500 NO2 B	
360-31095-6MS	Matrix Spike	T	Water	SM 4500 NO2 B	
360-31095-6MSD	Matrix Spike Duplicate	T	Water	SM 4500 NO2 B	
360-31095-7	OC-SW-SD-17	T	Water	SM 4500 NO2 B	
360-31095-8	OC-SW-PZ18R-DUP	T	Water	SM 4500 NO2 B	
<b>Analysis Batch:360-66028</b>					
LCS 360-66028/1	Lab Control Sample	T	Water	SM 2510B	
MB 360-66028/4	Method Blank	T	Water	SM 2510B	
360-31095-1	OC-SW-ISCO1	T	Water	SM 2510B	
360-31095-2	OC-SW-ISCO2	T	Water	SM 2510B	
360-31095-3	OC-SW-ISCO3	T	Water	SM 2510B	
360-31095-4	OC-SW-PZ-16RR	T	Water	SM 2510B	
360-31095-5	OC-SW-PZ-17RR	T	Water	SM 2510B	
360-31095-6	OC-SW-PZ-18R	T	Water	SM 2510B	
360-31095-6DU	Duplicate	T	Water	SM 2510B	
360-31095-7	OC-SW-SD-17	T	Water	SM 2510B	
360-31095-8	OC-SW-PZ18R-DUP	T	Water	SM 2510B	
<b>Analysis Batch:360-66057</b>					
LCS 360-66057/4	Lab Control Sample	T	Water	300.0	
MB 360-66057/3	Method Blank	T	Water	300.0	
360-31095-1	OC-SW-ISCO1	T	Water	300.0	
360-31095-2	OC-SW-ISCO2	T	Water	300.0	
360-31095-3	OC-SW-ISCO3	T	Water	300.0	
360-31095-4	OC-SW-PZ-16RR	T	Water	300.0	
360-31095-5	OC-SW-PZ-17RR	T	Water	300.0	
360-31095-6	OC-SW-PZ-18R	T	Water	300.0	
360-31095-6MS	Matrix Spike	T	Water	300.0	
360-31095-6MSD	Matrix Spike Duplicate	T	Water	300.0	
360-31095-7	OC-SW-SD-17	T	Water	300.0	
360-31095-8	OC-SW-PZ18R-DUP	T	Water	300.0	
<b>Analysis Batch:360-66184</b>					
LCS 360-66184/4	Lab Control Sample	T	Water	300.0	
MB 360-66184/3	Method Blank	T	Water	300.0	
360-31095-1	OC-SW-ISCO1	T	Water	300.0	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Prep Batch: 360-66228</b>					
LCS 360-66228/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 360-66228/1-A	Method Blank	T	Water	Distill/Ammonia	
360-31095-1	OC-SW-ISCO1	T	Water	Distill/Ammonia	
360-31095-2	OC-SW-ISCO2	T	Water	Distill/Ammonia	
360-31095-3	OC-SW-ISCO3	T	Water	Distill/Ammonia	
360-31095-4	OC-SW-PZ-16RR	T	Water	Distill/Ammonia	
360-31095-6	OC-SW-PZ-18R	T	Water	Distill/Ammonia	
360-31095-6MS	Matrix Spike	T	Water	Distill/Ammonia	
360-31095-6MSD	Matrix Spike Duplicate	T	Water	Distill/Ammonia	
<b>Prep Batch: 360-66232</b>					
LCS 360-66232/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 360-66232/1-A	Method Blank	T	Water	Distill/Ammonia	
360-31095-7	OC-SW-SD-17	T	Water	Distill/Ammonia	
360-31095-8	OC-SW-PZ18R-DUP	T	Water	Distill/Ammonia	
<b>Analysis Batch:360-66304</b>					
LCS 360-66228/2-A	Lab Control Sample	T	Water	L107-06-1B	360-66228
MB 360-66228/1-A	Method Blank	T	Water	L107-06-1B	360-66228
360-31095-1	OC-SW-ISCO1	T	Water	L107-06-1B	360-66228
360-31095-2	OC-SW-ISCO2	T	Water	L107-06-1B	360-66228
360-31095-3	OC-SW-ISCO3	T	Water	L107-06-1B	360-66228
360-31095-4	OC-SW-PZ-16RR	T	Water	L107-06-1B	360-66228
360-31095-6	OC-SW-PZ-18R	T	Water	L107-06-1B	360-66228
360-31095-6MS	Matrix Spike	T	Water	L107-06-1B	360-66228
360-31095-6MSD	Matrix Spike Duplicate	T	Water	L107-06-1B	360-66228
<b>Analysis Batch:360-66305</b>					
LCS 360-66232/2-A	Lab Control Sample	T	Water	L107-06-1B	360-66232
MB 360-66232/1-A	Method Blank	T	Water	L107-06-1B	360-66232
360-31095-7	OC-SW-SD-17	T	Water	L107-06-1B	360-66232
360-31095-8	OC-SW-PZ18R-DUP	T	Water	L107-06-1B	360-66232
<b>Analysis Batch:360-66328</b>					
LCS 360-66328/4	Lab Control Sample	T	Water	300.0	
MB 360-66328/3	Method Blank	T	Water	300.0	
360-31095-2	OC-SW-ISCO2	T	Water	300.0	
360-31095-3	OC-SW-ISCO3	T	Water	300.0	
360-31095-4	OC-SW-PZ-16RR	T	Water	300.0	
360-31095-5	OC-SW-PZ-17RR	T	Water	300.0	
360-31095-6	OC-SW-PZ-18R	T	Water	300.0	
360-31095-6MS	Matrix Spike	T	Water	300.0	
360-31095-6MSD	Matrix Spike Duplicate	T	Water	300.0	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:360-66329</b>					
LCS 360-66329/6	Lab Control Sample	T	Water	300.0	
MB 360-66329/5	Method Blank	T	Water	300.0	
360-31095-7	OC-SW-SD-17	T	Water	300.0	
360-31095-7MS	Matrix Spike	T	Water	300.0	
360-31095-7MSD	Matrix Spike Duplicate	T	Water	300.0	
360-31095-8	OC-SW-PZ18R-DUP	T	Water	300.0	
<b>Prep Batch: 360-66418</b>					
LCS 360-66418/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 360-66418/1-A	Method Blank	T	Water	Distill/Ammonia	
360-31095-5	OC-SW-PZ-17RR	T	Water	Distill/Ammonia	
<b>Analysis Batch:360-66490</b>					
LCS 360-66418/2-A	Lab Control Sample	T	Water	L107-06-1B	360-66418
MB 360-66418/1-A	Method Blank	T	Water	L107-06-1B	360-66418
360-31095-5	OC-SW-PZ-17RR	T	Water	L107-06-1B	360-66418

#### Report Basis

T = Total

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### **Method Blank - Batch: 360-65998**

Lab Sample ID: MB 360-65998/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/18/2010 1809  
Date Prepared: 11/18/2010 0829

Analysis Batch: 360-66064  
Prep Batch: 360-65998  
Units: ug/L

### **Method: 6010B**

### **Preparation: 3010A**

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		12	100
Chromium	ND		0.65	5.0
Sodium	ND		280	2000

### **Lab Control Sample/**

### **Lab Control Sample Duplicate Recovery Report - Batch: 360-65998**

LCS Lab Sample ID: LCS 360-65998/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/18/2010 1812  
Date Prepared: 11/18/2010 0829

Analysis Batch: 360-66064  
Prep Batch: 360-65998  
Units: ug/L

### **Method: 6010B**

### **Preparation: 3010A**

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 360-65998/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/18/2010 1815  
Date Prepared: 11/18/2010 0829

Analysis Batch: 360-66064  
Prep Batch: 360-65998  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.				RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD	Limit					
Aluminum	105	101	80 - 120	4	20			
Chromium	107	103	80 - 120	4	20			
Sodium	102	98	80 - 120	4	20			

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Post Digestion Spike - Batch: 360-65998

**Method: 6010B**

**Preparation: 3010A**

Lab Sample ID: 360-31095-6      Analysis Batch: 360-66064  
Client Matrix: Water      Prep Batch: 360-65998  
Dilution: 1.0      Units: ug/L  
Date Analyzed: 11/18/2010 1835  
Date Prepared: 11/18/2010 0829

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	240	5000	4970	95	75 - 125	
Chromium	24	1000	985	96	75 - 125	
Sodium	71000	20000	86400	75	75 - 125	

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 360-65998

**Method: 6010B**

**Preparation: 3010A**

MS Lab Sample ID: 360-31095-6      Analysis Batch: 360-66064  
Client Matrix: Water      Prep Batch: 360-65998  
Dilution: 1.0      Units: ug/L  
Date Analyzed: 11/18/2010 1821  
Date Prepared: 11/18/2010 0829

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 360-31095-6      Analysis Batch: 360-66064  
Client Matrix: Water      Prep Batch: 360-65998  
Dilution: 1.0      Units: ug/L  
Date Analyzed: 11/18/2010 1830  
Date Prepared: 11/18/2010 0829

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD				
Aluminum	98	100	75 - 125	2	20	
Chromium	98	101	75 - 125	2	20	
Sodium	100	118	75 - 125	4	20	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Serial Dilution - Batch: 360-65998

Method: 6010B

Preparation: 3010A

Lab Sample ID: 360-31095-6      Analysis Batch: 360-66064  
Client Matrix: Water      Prep Batch: 360-65998  
Dilution: 5.0      Units: ug/L  
Date Analyzed: 11/18/2010 1833  
Date Prepared: 11/18/2010 0829

Instrument ID: Varian ICP  
Lab File ID: 111810b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Aluminum	240	253	NC	10	J
Chromium	24	24.3	NC	10	J
Sodium	71000	76800	7.6	10	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### **Method Blank - Batch: 360-66152**

**Method: 6010B**

**Preparation: N/A**

Lab Sample ID: MB 360-66152/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/19/2010 1400  
Date Prepared: N/A

Analysis Batch: 360-66152  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 111910d.csv  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		12	100
Chromium	ND		0.65	5.0
Sodium	ND		280	2000

### **Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 360-66152**

**Method: 6010B**

**Preparation: N/A**

LCS Lab Sample ID: LCS 360-66152/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/19/2010 1357  
Date Prepared: N/A

Analysis Batch: 360-66152  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 111910d.csv  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 360-66152/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/19/2010 1448  
Date Prepared: N/A

Analysis Batch: 360-66152  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 111910d.csv  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD				
Aluminum	100	99	80 - 120	0	20	
Chromium	100	99	80 - 120	1	20	
Sodium	100	99	80 - 120	1	20	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 360-66152

**Method: 6010B**

**Preparation: N/A**

MS Lab Sample ID:	360-31095-6	Analysis Batch:	360-66152	Instrument ID:	Varian ICP
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	111910d.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1454			Final Weight/Volume:	10 mL
Date Prepared:	N/A				
MSD Lab Sample ID:	360-31095-6	Analysis Batch:	360-66152	Instrument ID:	Varian ICP
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	111910d.csv
Dilution:	1.0			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1456			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Aluminum	95	97	75 - 125	3	20		
Chromium	93	96	75 - 125	3	20		
Sodium	71	73	75 - 125	0	20	4	4

### Serial Dilution - Batch: 360-66152

**Method: 6010B**

**Preparation: N/A**

Lab Sample ID:	360-31095-6	Analysis Batch:	360-66152	Instrument ID:	Varian ICP
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	111910d.csv
Dilution:	5.0	Units:	ug/L	Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/19/2010 1459			Final Weight/Volume:	1.0 mL
Date Prepared:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
	150	279				
Aluminum	150	279	NC	10	J	
Chromium	16	16.7	NC	10	J	
Sodium	81000	77600	3.8	10		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66057

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: MB 360-66057/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/16/2010 1800  
Date Prepared: N/A

Analysis Batch: 360-66057  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Nitrate as N	ND		0.050	0.050

### Lab Control Sample - Batch: 360-66057

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: LCS 360-66057/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/16/2010 1815  
Date Prepared: N/A

Analysis Batch: 360-66057  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.00	1.08	108	85 - 115	

### Matrix Spike/

### Matrix Spike Duplicate Recovery Report - Batch: 360-66057

**Method: 300.0**

**Preparation: N/A**

MS Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/16/2010 1846  
Date Prepared: N/A

Analysis Batch: 360-66057  
Prep Batch: N/A

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/16/2010 1901  
Date Prepared: N/A

Analysis Batch: 360-66057  
Prep Batch: N/A

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	109	109	75 - 125	0	20		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66184

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: MB 360-66184/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/19/2010 1340  
Date Prepared: N/A

Analysis Batch: 360-66184  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Sulfate	ND		2.0	2.0
Chloride	ND		1.0	1.0

### Lab Control Sample - Batch: 360-66184

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: LCS 360-66184/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/19/2010 1355  
Date Prepared: N/A

Analysis Batch: 360-66184  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	80.0	84.7	106	85 - 115	
Chloride	40.0	42.1	105	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66328

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: MB 360-66328/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/22/2010 0959  
Date Prepared: N/A

Analysis Batch: 360-66328  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Sulfate	ND		2.0	2.0
Chloride	ND		1.0	1.0

### Lab Control Sample - Batch: 360-66328

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: LCS 360-66328/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/22/2010 1014  
Date Prepared: N/A

Analysis Batch: 360-66328  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	80.0	83.4	104	85 - 115	
Chloride	40.0	41.3	103	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 360-66328

**Method: 300.0**

**Preparation: N/A**

MS Lab Sample ID:	360-31095-6	Analysis Batch:	360-66328	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/22/2010 1516			Final Weight/Volume:	10 mL
Date Prepared:	N/A				
MSD Lab Sample ID:	360-31095-6	Analysis Batch:	360-66328	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/22/2010 1531			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sulfate	127	126	75 - 125	0	20	F	F
Chloride	113	113	75 - 125	0	20		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66329

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: MB 360-66329/5  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/22/2010 1632  
Date Prepared: N/A

Analysis Batch: 360-66329  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Sulfate	ND		2.0	2.0
Chloride	ND		1.0	1.0

### Lab Control Sample - Batch: 360-66329

**Method: 300.0**

**Preparation: N/A**

Lab Sample ID: LCS 360-66329/6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/22/2010 1647  
Date Prepared: N/A

Analysis Batch: 360-66329  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	80.0	83.8	105	85 - 115	
Chloride	40.0	41.5	104	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 360-66329

**Method: 300.0**

**Preparation: N/A**

MS Lab Sample ID:	360-31095-7	Analysis Batch:	360-66329	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/22/2010 1717			Final Weight/Volume:	10 mL
Date Prepared:	N/A				
MSD Lab Sample ID:	360-31095-7	Analysis Batch:	360-66329	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	10			Initial Weight/Volume:	1.0 mL
Date Analyzed:	11/22/2010 1732			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sulfate	120	121	75 - 125	0	20		
Chloride	114	114	75 - 125	0	20		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66228

Lab Sample ID: MB 360-66228/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/24/2010 1017  
Date Prepared: 11/23/2010 0955

Analysis Batch: 360-66304  
Prep Batch: 360-66228  
Units: mg/L

### Method: L107-06-1B

Preparation: Distill/Ammonia

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND		0.10	0.10

### Lab Control Sample - Batch: 360-66228

Lab Sample ID: LCS 360-66228/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/24/2010 1018  
Date Prepared: 11/23/2010 0955

Analysis Batch: 360-66304  
Prep Batch: 360-66228  
Units: mg/L

Method: L107-06-1B  
Preparation: Distill/Ammonia

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	9.50	95	85 - 115	

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 360-66228

Method: L107-06-1B  
Preparation: Distill/Ammonia

MS Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 5.0  
Date Analyzed: 11/24/2010 1127  
Date Prepared: 11/23/2010 0955

Analysis Batch: 360-66304  
Prep Batch: 360-66228

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 5.0  
Date Analyzed: 11/24/2010 1128  
Date Prepared: 11/23/2010 0955

Analysis Batch: 360-66304  
Prep Batch: 360-66228

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.				RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD	Limit					
Ammonia	84	77	75 - 125		2	20		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66232

**Method: L107-06-1B**

**Preparation: Distill/Ammonia**

Lab Sample ID: MB 360-66232/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/24/2010 1040  
Date Prepared: 11/23/2010 1056

Analysis Batch: 360-66305  
Prep Batch: 360-66232  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND		0.10	0.10

### Lab Control Sample - Batch: 360-66232

**Method: L107-06-1B**

**Preparation: Distill/Ammonia**

Lab Sample ID: LCS 360-66232/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/24/2010 1041  
Date Prepared: 11/23/2010 1056

Analysis Batch: 360-66305  
Prep Batch: 360-66232  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	9.33	93	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### Method Blank - Batch: 360-66418

Lab Sample ID: MB 360-66418/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/30/2010 1620  
Date Prepared: 11/30/2010 0912

Analysis Batch: 360-66490  
Prep Batch: 360-66418  
Units: mg/L

**Method: L107-06-1B**  
**Preparation: Distill/Ammonia**

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND		0.10	0.10

### Lab Control Sample - Batch: 360-66418

Lab Sample ID: LCS 360-66418/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/30/2010 1621  
Date Prepared: 11/30/2010 0912

Analysis Batch: 360-66490  
Prep Batch: 360-66418  
Units: mg/L

**Method: L107-06-1B**  
**Preparation: Distill/Ammonia**

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	9.53	95	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

### **Method Blank - Batch: 360-66028**

**Method: SM 2510B**

**Preparation: N/A**

Lab Sample ID: MB 360-66028/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/18/2010 1005  
Date Prepared: N/A

Analysis Batch: 360-66028  
Prep Batch: N/A  
Units: umhos/cm

Instrument ID: Autotitrator  
Lab File ID: 10111800.TXT  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Specific Conductance	ND		1.0	1.0

### **Lab Control Sample - Batch: 360-66028**

**Method: SM 2510B**

**Preparation: N/A**

Lab Sample ID: LCS 360-66028/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/18/2010 0942  
Date Prepared: N/A

Analysis Batch: 360-66028  
Prep Batch: N/A  
Units: umhos/cm

Instrument ID: Autotitrator  
Lab File ID: 10111800.TXT  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Specific Conductance	1410	1380	97	85 - 115	

### **Duplicate - Batch: 360-66028**

**Method: SM 2510B**

**Preparation: N/A**

Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/18/2010 1120  
Date Prepared: N/A

Analysis Batch: 360-66028  
Prep Batch: N/A  
Units: umhos/cm

Instrument ID: Autotitrator  
Lab File ID: 10111800.TXT  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Specific Conductance	790	796	0.3	20	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-31095-1

**Method Blank - Batch: 360-65968****Method: SM 4500 NO2 B****Preparation: N/A**

Lab Sample ID: MB 360-65968/9  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/17/2010 1120  
Date Prepared: N/A

Analysis Batch: 360-65968  
Prep Batch: N/A  
Units: mg/L

Instrument ID: Jenway UV/VIS  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Nitrite as N	ND		0.010	0.010

**Lab Control Sample - Batch: 360-65968****Method: SM 4500 NO2 B****Preparation: N/A**

Lab Sample ID: LCS 360-65968/10  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/17/2010 1120  
Date Prepared: N/A

Analysis Batch: 360-65968  
Prep Batch: N/A  
Units: mg/L

Instrument ID: Jenway UV/VIS  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrite as N	0.100	0.0982	98	85 - 115	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 360-65968****Method: SM 4500 NO2 B****Preparation: N/A**

MS Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/17/2010 1120  
Date Prepared: N/A

Analysis Batch: 360-65968  
Prep Batch: N/A

Instrument ID: Jenway UV/VIS  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 360-31095-6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 11/17/2010 1120  
Date Prepared: N/A

Analysis Batch: 360-65968  
Prep Batch: N/A

Instrument ID: Jenway UV/VIS  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrite as N	96	95	75 - 125	1	20		

# State Accreditation Matrix

Method Name	Description	State where Primary Accreditation is Carried			
		New Hampshire (NELAC) prim.	Mass	Conn	Florida (NELAC)
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)	NP			NP
SM 4500 CI F	Chlorine, Residual		NP		
SM 9215E	Heterotrophic Plate Count (SimPlate)		P		
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP		
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P		
SM 9224	Coliforms, Total, and E.Coli (Enumeration)		P		
1103.1	E.coli		ambient/ source		
Enterolert	Enterococcus				
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P	NP/P	
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P	NP/P	
6010B	Metals (ICP)(list upon request)	NP/SW		NP/SW	
245.1	Mercury (CVAA)	NP/P	NP	NP/P	
7470A	Mercury (CVAA)	NP		NP	
7471A	Mercury (CVAA)	SW		SW	
SM 2340B	Total Hardness (as CaCO <sub>3</sub> ) by calculation	NP/P	NP	NP/P	
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P		NP/P	
3010A	Preparation, Total Metals	NP/P		NP/P	
3020A	Preparation, Total Metals	NP/P/SW		NP/P/SW	
3050B	Preparation, Metals	SW		SW	
504.1	EDB, DBCP and 1,2,3-TCP (GC)	P	P	P	
608	Organochlorine Pest/PCBs (list upon request)	NP	NP	NP	
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP		NP	
3546	Microwave Extraction	SW			
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP		NP	
3540C	Soxhlet Extraction	SW			
3550B	Ultrasonic Extraction	SW		SW	
600/4-81-045	Polychlorinated Biphenyls (PCBs) (GC)		NP	NP	
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW		NP/SW	
8082A	PCBs by Gas Chromatography(list upon request)	NP/SW		NP/SW	
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW		NP/SW	
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW	
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)			NP/SW	NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P	P	
524.2	Trihalomethane compounds	P	P	P	
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP	NP	
5035	Closed System Purge and Trap	SW		SW	
5030B	Purge and Trap	NP		NP	
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW		NP/SW	
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)			NP/SW	NP/SW
180.1	Turbidity, Nephelometric	P	P	P	
300	Anions, Ion Chromatography	NP/P	NP/P	NP/P	
410.4	COD	NP	NP	NP	
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW		SW	
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP	NP	
7196A	Chromium, Hexavalent	NP/SW		NP/SW	
9012A	Cyanide, Total and/or Amenable	NP/SW		NP/SW	
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP		NP	
9040B	pH	NP		NP	
9045C	pH	SW		SW	
L107041C	Nitrogen, Nitrate	NP	P	NP/P	
L107-06-1B	Nitrogen Ammonia	NP	NP	NP/P	
L204001A CN	Cyanide, Total	P	NP/P	NP/P	
L210-001A	Phenolics, Total Recoverable	NP	NP	NP	
SM 2320B	Alkalinity	NP/P	NP/P	NP/P	
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P	NP/P	
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P	NP/P	
SM 2540D	Solids, Total Suspended (TSS)	NP	NP	NP	
SM 3500 CR D	Chromium, Hexavalent	NP		NP	
SM 4500 H+ B	pH	NP/P	NP/P	NP/P	
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P	NP/P	
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP	NP/P	
SM 4500 P E	Phosphorus, Total	NP	NP	NP	
SM 4500 S2 D	Sulfide, Total	NP		NP	
SM 5210B	BOD, 5-Day	NP	NP	NP	
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP	NP/P	

Not all organic compounds are accredited under NELAC

For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory

The lab carries additional accreditations with several states. This is the laboratories typical listing but is subject to change based on the laboratories current certification standing.

## Login Sample Receipt Check List

Client: Olin Corporation

Job Number: 360-31095-1

**Login Number:** 31095

**List Source:** TestAmerica Westfield

**Creator:** Beaumier, Janine E

**List Number:** 1

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

TestAmerica Westfield

Westfield Executive Park 53 Southampton Road

## Chain of Custody Record

Phone (413) 572-4000 Fax (413) 572-3707

## **Client Information**

Client Contact:

Globe 110

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